CHEM 261 Notes 2 September 20, 2018

**Recall:**

The lower the pKa the more acidic the compound

Examples of strong acids:

|  |  |
| --- | --- |
| **Acid** | **pKa** |
| HI | -10 |
| HBr | -9  Can go up to +3.17 in a diluted sol’n (in water) |
| HCl | -7 |
| HF | -10 |
| H3O+ | -1.74 |

Two factors that affect acidity of the above acids:

1. Electronegativity – the more electronegative the atom, the better it can hold a negative charge
2. Solvation – the larger the ion, the better solvated it can be and so the more acidic it’s conjugate acid will be

Ex #1)



A strong acid and a strong base will quickly react with each other to drive the reaction to the weak acid and the weak base.

Ex #2)



While water is not actually a strong base, it is in comparison to C-. HCl is the strong acid, and so the equilibrium lies to the right. Hence H3O+ is the strongest acid that will exist in an aqueous solution of HCl.

Ex #3)



Ex #4)



δ+ δ−

pka 15.7



Ex #5)



NB: Oxygen is more electron withdrawing than Carbon and can stabilize negative charge so removing a proton from the oxygen is preferable than from the Carbon on the phenol compound

